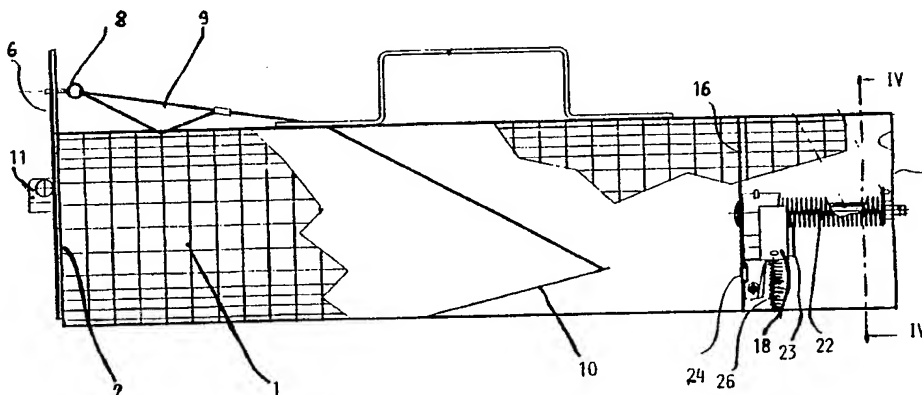




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(21) International Application Number: PCT/SE94/00903 (22) International Filing Date: 30 September 1994 (30.09.94) (30) Priority Data: 9303200-1 1 October 1993 (01.10.93) SE (71)(72) Applicant and Inventor: LUNDGREN, Lars-Olof [SE/SE]; Stoltmakaregatan 21, S-571 41 Nässjö (SE). (74) Agent: LUNDQUIST, Arne; Pionjärgatan 31, S-582 65 Linköping (SE).	(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ). Published <i>With international search report.</i> <i>In English translation (filed in Swedish).</i>	

(54) Title: A TRAP FOR TRAPPING AND POSSIBLY KILLING OF ANIMALS, ESPECIALLY SMALL ONES



(57) Abstract

A trap is described, for catching and possibly killing of animals, especially small animals, like minks etc. The trap comprises a relatively elongated cage (1), preferably formed with a bottom, side walls and a roof made from bars, and has a first gable wall (2) with a preferably circular first opening (4) intended to form an entrance for the animal, and a door (7) provided, guided by guide elements (6), to be able to take a first position with the trap activated, in which said opening (4) is open, and to take a second position, in which the trap is deactivated with said opening (4) closed. The trap is also provided with an activating means (8, 9, 10) provided to act upon the door (7) to go from the first to the second position, with a first touching element (10) in the cage, and a second gable wall (3). According to the invention, the trap is primarily characterized in that it is provided with indicating means, optically readable in a relatively large distance, for indicating of the activated or deactivated position of the trap.

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A trap for trapping and possibly killing of animals, especially small ones.

The present invention relates to a trap for catching and possibly killing of animals like minks etc, but also larger animals, of the art comprising a relatively elongated cage, preferably formed with a bottom, side walls and a roof made from bars, with a first gable wall with a preferably circular first opening intended to form an entrance for the animal, and a door provided, guided by guide elements, to be able to take a first position with the trap activated, in which said opening is open, and to take a second position, in which the trap is deactivated with said opening closed, further an activating means provided to act upon the the door to go from the first to the second position, comprising a first touching element in the cage, and a second gable wall, the door preferably being formed like a circular plate guided by guide elements fixed to the first gable wall, the first position of the door, with the cage activated, preferably being above its second position, with the cage deactivated.

Since a long time, there is a demand for such a trap, which is of simple and cheap construction but is reliable and efficient when used.

According to the invention, such a trap is primarily characterized in that the trap is provided with indicating means, optically readable in a relatively large distance, for indicating of the activated resp deactivated position of the trap..

In a preferred embodiment of the trap, said indicating means consist of at least one first surface element, which is provided to take a position, visible outwardly from one first direction resp one outwardly not visible position, when the door takes its first or second position.

In one suitable embodiment of the the trap the indicating means comprise at least one further surface element, which is provided to take a position, visible outwardly from a position, opposite to the first direction, resp a position not visible, when the door takes its first or second position.

In one further preferred embodiment the trap comprises at least one third surface element with such a form, that it can be optically easily distinguished from said first resp second surface elements, for making the determination of the position of the trap in the dark easier.

In suitable embodiments of the invention, at least one of said surface elements is reflecting and/or fluorescent.

In one advantageous embodiment the trap is provided with an activating means consisting of a first touching element in the form of a treading plate, journaled at the bottom of the cage, the treading plate (10) being connected, via a thread to a cotter pin keeping the door in its first position, the activating pressure at the treading plate being adjustable by setting the angle between the legs of the cotter pin.

Often there is a need for a killing device in the cage, suitably provided in the portion of the cage, that is opposite to said opening.

In one advantageous embodiment the killing device comprises a third, inner gable wall, in which there is provided a second opening, with a dimension, adapted to comprise the head of the animal with a certain margin, further a fixing clamp provided to be able to take a first activated position with an active portion at such a distance from the limit of the opening, that there room for the head of the animal within the clamp, and a second deactivated position with said active portion acting with a certain force, so that a head of an animal can be fixed against the limit of the opening, and a hit means provided to be able to take an activated first position pretensioned against a power means, like a screw spring, and a deactivated second position within the level area of the second opening, so that the hit means can hit the head of the animal, killing, when it has been fixed by the fixing clamp, the fixing clamp and the hit means being provided to be released their first positions, in which they have been fixed by fixing means, by a second touching means located within the area for the second opening, able to be acted upon with a relatively small power by one portion of the head of the animal like its lower jaw. If the opening is formed with side edges, that converge downwardly, it is warranted, that the head of the animal is placed in such a position of the clamp, that the hit means with its preferably conical point will hit immediately killing.

It is suitable to arrange the hit means journaled around a horizontal shaft, pretensionable against a screw spring, provided around this shaft.

The invention shall be described more in detail in the following, reference being made to the enclosed schematical figures, of which:

figure 1 shows a view towards an elongated wall of a trap according to the invention,

figure 2 shows a view towards the first gable wall of the trap,

figure 3 shows a view towards the second gable wall of the trap,
 figure 4 shows a view in the direction IV- IV in figure 1 with the trap activated,
 figure 5 shows a view in the same direction as in figure 4, but with the trap deactivated,
 figure 6 shows a view of a second opening, whilst
 figure 7 shows, in perspective, a killing device, with the trap activated, and
 figure 8 shows, in perspective, a killing device, with the trap deactivated.

In figure 1 there is shown a relatively elongated cage 1, formed by bars. It is provided with a first gable wall 2 and a second gable wall 3, which are shown in figures 2 and 3. In the first gable wall 2 there is a circular opening 4. A number of arched recesses 5 are formed in the gable wall with the intention to admit, that the opening 4 is made larger according to the norms of the Naturvårdsverk. A doublewalled guide 6 is attached to the first gable wall, for guiding vertically of a door 7 in the form of a circular plate. A recess 27 is made in the guide 6 at its outside, so that the door may be lifted from its second to its first position. An activating means is provided with a cotter pin 8 placed in a corresponding hole in the doublewalled guide 6 and a hole in the door 7 in the activated position of the trap, that is to say when the door 7 is held in a first position. The activating means also comprises a thread 9 connected to a first touching means 10 in the form of a treading plate at the floor of the cage. Thus the activating means functions in such a way, that when the animal enters the cage and presses down the treading plate with its weight, the cotter pin 8 is drawn by the thread from its position, so that the door falls down by the gravity and takes its second, deactivated position. Per se the treading plate can be omitted, and the thread can be fastened directly to the floor of the cage. As the door is circular there is no risk, that it shall bind to the guide 6. There is a lock 11 for locking of the door in its second position. As is obvious from figures 2 and 3 the trap is provided with two rectangular surface elements 12 and 13, suitably white, which make the finding of the trap in the dark easier. By providing such surface elements at both sides of the upper portion of the guide 6 the finding is made appreciably easier. At the side of the guide, that is turned to the cage, two holes 14 and 15 are provided in the upper portion, circular in the embodiment shown, but of course other forms may be considered. The side of the door, that is turned to these holes, is reflecting e.g. with red colour 14A and fluorescent colour 15A. With this embodiment it is seen by daytime, from the red fluorescent indication in the holes 14 and 15, that the trap is activated, and by night by seeing same by the red reflex, fluorescent, the indication showing that the trap is activated. The door is in this case at its other side provided with e.g. red colour 14B and fluorescent colour 15B. When the door falls down, these fields 14B and 15B get visible in the direction towards the door 7.

In figure 1 there is shown a third gable wall 16, provided within the cage in the vicinity of the second gable wall 3. This third gable wall 16 forms part of a killing device, and a second opening 17 is provided in the third gable wall, as is more obvious from figures 4 and 5. The killing device is shown in activated position in figures 1, 4 and 7, and in deactivated position in figures 5 and 8. The second opening 17 has the right size to comprise a the head of a caught animal. In figure 6 a preferred embodiment of this opening is shown, with side edges, that converge downwardly, so that the jaw of an animal fits, getting fixed in the opening. A fixing clamp 18 is provided, fixed to the third gable, being able to take an activated first position as in figures 1, 4 and 7 and a deactivated position as in figures 5 and 8. The activated position means, that an animal can put in its head through the opening and into the fixing clamp in its activated position, and that its deactivated position means, that the fixing clamp aided by a spring 26 attached to the bottom of the cage, presses the head of the animal against the lower portion of the second opening 17. A hit means in the form of hit arm 19 with a preferably conical point 20 is journaled around a horizontal shaft 21, which is mounted in bearings in the second and third gable walls. The hit arm can be pretensioned to an activated position against a screw spring 22. The fixing clamp 18 and the hit arm 19 are kept in their activated positions by fixing means, in the form of a plate tongue 24, inserted into one of a number of oval holes 25 in the third gable wall 16. This plate tongue is connected to an activating arm 23, which in activated position covers the second opening 17, being able to be acted upon by a relatively small force by a portion of the head of the animal like its lower jaw. The function is thus, that the animal by touching the activating arm 23 firstly brings the fixing clamp to lock its head against the lower portion of the opening 17, whereupon the hit arm hits killing against the head of the animal. By a suitable form of the opening 17, as is shown in figure 6, the head of the animal will be fixed in such a position, that the hit arm with its conical portion will hit in the middle of the head of the animal, whereby the killing will be efficient considering the form of the cranium of the animal, in many cases with a ridge in direct connection to the brain. Per se it is of course perfectly possible to form the killing device so that the hit arm will hit from another direction than that shown in the figures, that is to say optionally from above, from below or from a side, but the embodiment shown has proven to be suitable and efficient. The spring 26 can also be arranged to give the hit arm a certain starting speed.

Claims

1. A trap for catching and possibly killing of animals like minks etc, but also larger animals, of the art comprising a relatively elongated cage (1), preferably formed with a bottom, side walls and a roof made from bars, with a first gable wall (2) with a preferably circular first opening (4) intended to form an entrance for the animal, and a door (7) provided, guided by guide elements (6), to be able to take a first position with the trap activated, in which said opening (4) is open, and to take a second position, in which the trap is deactivated with said opening (4) closed, further an activating means (8,9,10) provided to act upon the the door (7) to go from the first to the second position, comprising a first touching element (10) in the cage, and a second gable wall (3), the door (7) preferably being formed like a circular plate (7) guided by guide elements (6) fixed to the first gable wall (2), the first position of the door (7), with the cage activated, preferably being above its second position, with the cage deactivated, characterized in that the trap is provided with indicating means, optically readable in a relatively large distance, for indicating of the activated resp deactivated position of the trap..

2. A trap according to claim 1, characterized in that said indicating means consist of at least one first surface element (14A,15A), which is provided to take a position, visible outwardly from one first direction resp one outwardly not visible position, when the door (7) takes its first or second position.

3. A trap according to claim 2, characterized in that the indicating means comprise at least one further surface element (14B,15B), which is provided to take a position, visible outwardly from a position, opposite to the first direction, resp a position not visible, when the door (7) takes its first or second position.

4. A trap according to claim 2 or 3, characterized in that it comprises at least one third surface element (12,13) with such a form, that it can be optically easily distinguished from said first (14A,15A) resp second (14B,15B) surface elements, for making the determination of the position of the trap in the dark easier.

5. A trap according to any of claims 1 to 4, characterized in that

at least one of said surface elements (14A,15A,14B,15B,12,13) is reflecting and/or fluorescent.

6. A trap according to any of the preceeding claims, at which the activating means consists of a first touching element in the form of a treading plate (10), journalled at the bottom of the cage,
characterized in that

the treading plate (10) is connected, via a thread (9) to a cotter pin (8) keeping the door (7) in its first position, the activating pressure at the treading plate (10) being adjustable by setting the angle between the legs of the cotter pin (8).

7. A trap according to any of the preceeding claims,
characterized in that it is provided with a killing device in the portion of the cage, that is opposite to said opening (4).

8. A trap according to claim 7,
characterized in that

the killing device comprises a third, inner gable wall (16), in which there is provided a second opening (17), with a dimension, adapted to comprise the head of the animal with a certain margin, further a fixing clamp (18) provided to be able to take a first activated position with an active portion at such a distance from the limit of the opening (17), that there room for the head of the animal within the fixing clamp (18), and a second deactivated position with said active portion acting with a certain force, i e provided by a spring (26) so that a head of an animal can be fixed against the limit of the opening (17), and a hit means (19) provided to be able to take an activated first position pretensioned against a power means, like a screw spring (22), and a deactivated second position within the level area of the second opening (17), so that the hit means (19) can hit the head of the animal, killing, when it has been fixed by the fixing clamp (18) , the fixing clamp and the hit means (19) beeing provided to be released from their first positions, in which they have been fixed by fixing means (24,25), by a second touching means (23) located within the area for the second opening (17) able to be acted upon with a relatively small power by one portion of the head of the animal like its lower jaw.

9. A trap according to claim 8,
characterized in that
said opening (17) is formed with side edges, that converge downwardly.

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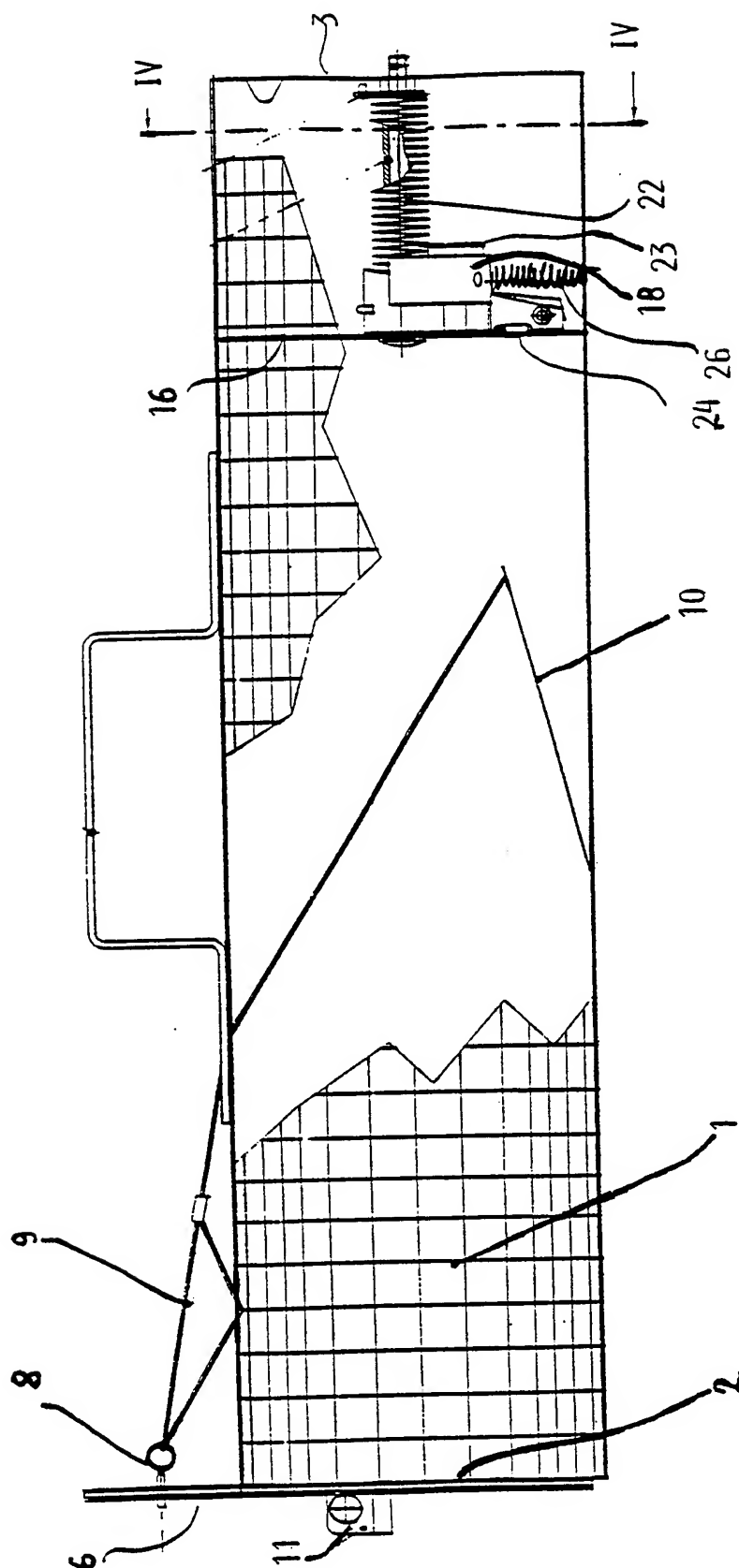


FIG. 1

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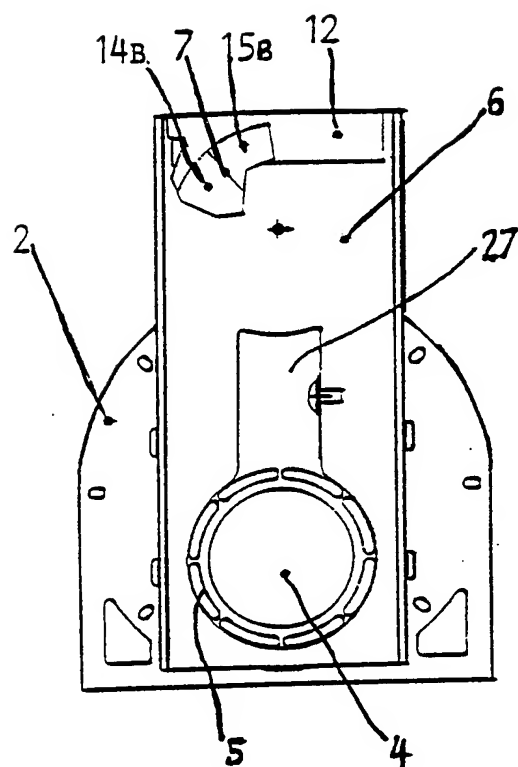


FIG. 2

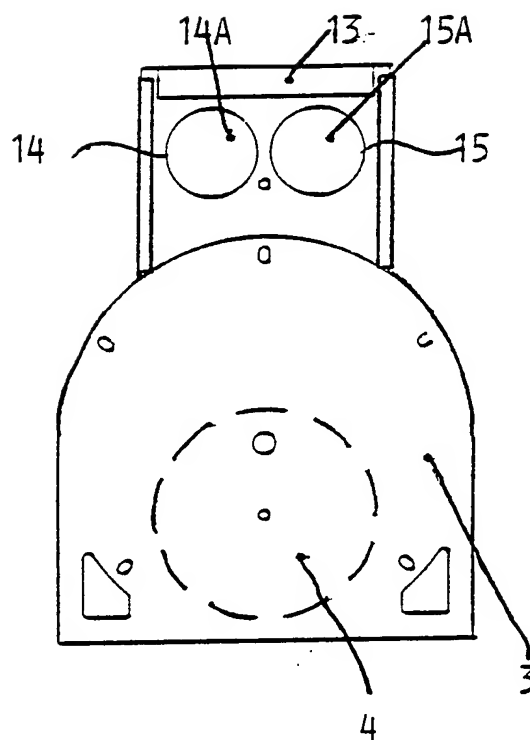


FIG. 3

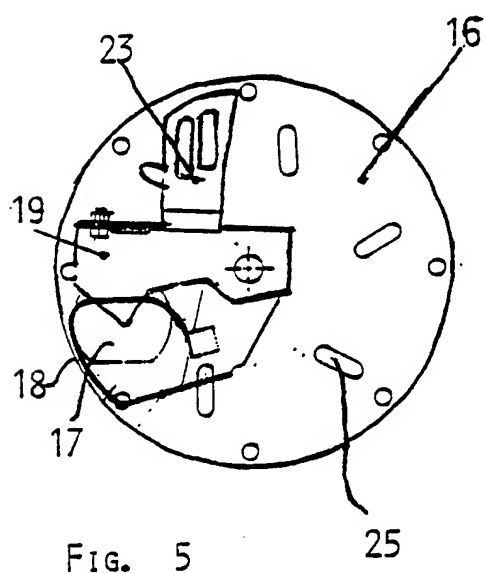


FIG. 5

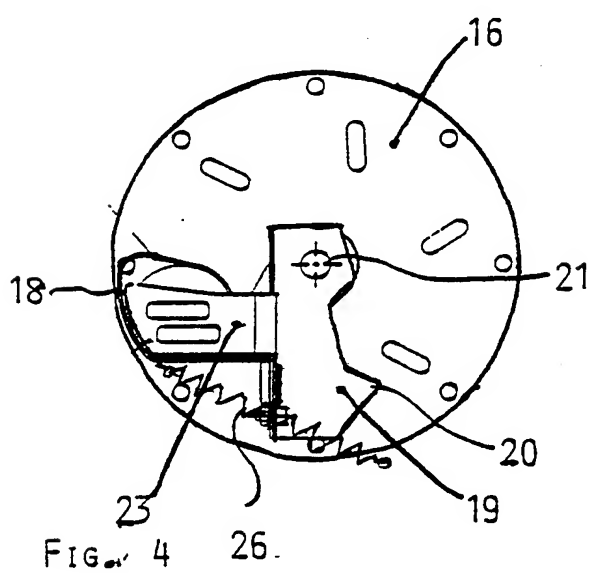


FIG. 4

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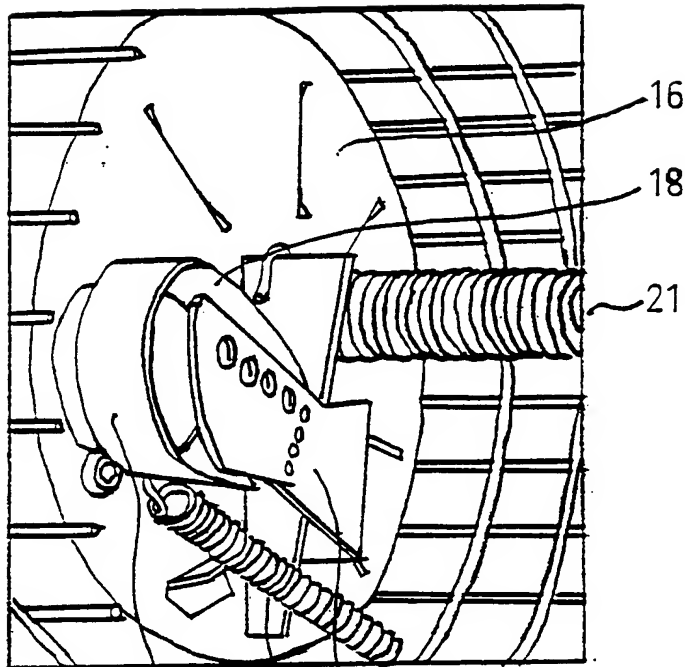


FIG. 7 17 26 23

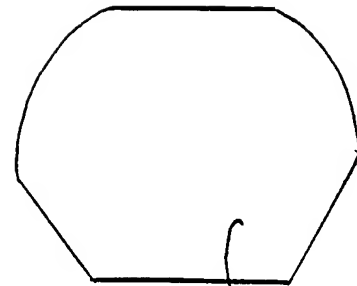


FIG. 6 17

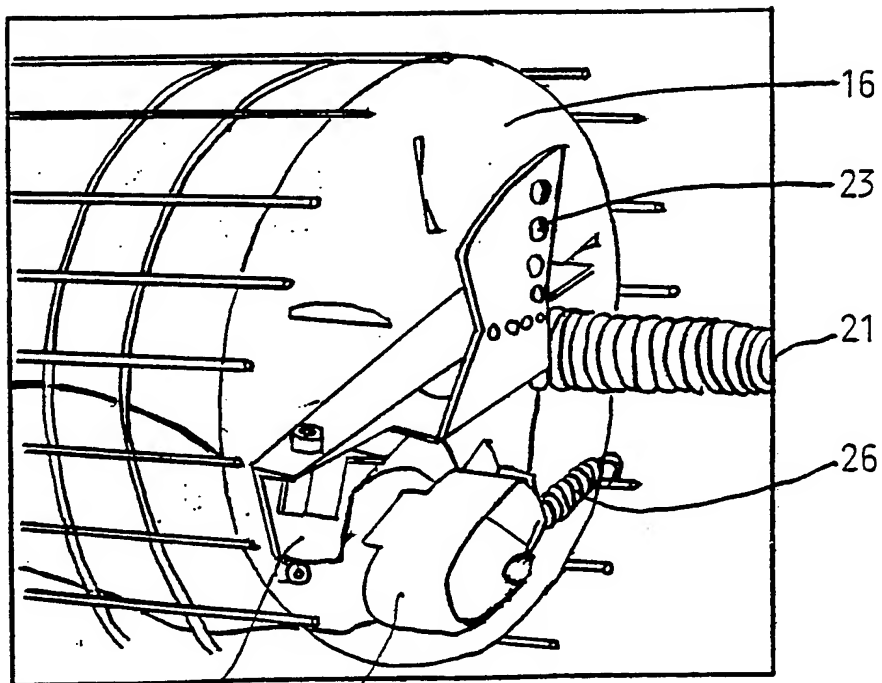


FIG. 8 19 18

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 94/00903

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: A01M 23/20, A01M 23/24, A01M 23/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: A01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, A, 4310984 (FRED A. BRUBAKER, JR.), 19 January 1982 (19.01.82), figures 1,2	1-5
Y	--	7
X	DE, C, 126038 (L. ILLICH), 28 November 1901 (28.11.01), figures 1,2	1
A	--	6
X	DE, C, 593752 (FRIEDRICH DIETSCH), 3 March 1934 (03.03.34), figures 1,2	1-5
A	--	6

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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29 December 1994

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, A, 4144667 (ANTHONY J. SOUZA), 20 March 1979 (20.03.79), column 4, line 38 - line 41, figures 1-4, abstract	7
A	--	1
Y	US, A, 1654434 (A.T. SENEAL), 27 December 1927 (27.12.27), figures 1-4	1-5
Y	US, A, 4393616 (GILBERT T. KAUFMAN ET AL), 19 July 1983 (19.07.83), column 2, line 32 - line 39; column 2, line 66 - column 3, line 14, figure 3	1-5
A	US, A, 4607450 (DENNIS G. KAISER ET AL), 26 August 1986 (26.08.86), figure 1	6

INTERNATIONAL SEARCH REPORT
Information on patent family members

26/11/94

International application No.
PCT/SE 94/00903

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US-A-	4310984	19/01/82	NONE		
DE-C-	126038	28/11/01	NONE		
DE-C-	593752	03/03/34	NONE		
US-A-	4144667	20/03/79	CA-A-	1093301	13/01/81
US-A-	1654434	27/12/27	NONE		
US-A-	4393616	19/07/83	AU-A-	8392582	06/10/82
			EP-A-	0075003	30/03/83
			WO-A-	8203154	30/09/82
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			EP-A-	0182556	28/05/86
			JP-A-	61132131	19/06/86

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ESPECIALLY SMALL ONES
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APPL-NO: SE09400903
APPL-DATE: September 30, 1994

PRIORITY-DATA: SE09303200A (October 1, 1993)

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A01M023/34

EUR-CL (EPC): A01M023/20 , A01M023/24 ,
A01M023/34

ABSTRACT:

A trap is described, for catching and possibly

killing of animals, especially small animals, like minks etc. The trap comprises a relatively elongated cage (1), preferably formed with a bottom, side walls and a roof made from bars, and has a first gable wall (2) with a preferably circular first opening (4) intended to form an entrance for the animal, and a door (7) provided, guided by guide elements (6), to be able to take a first position with the trap activated, in which said opening (4) is open, and to take a second position, in which the trap is deactivated with said opening (4) closed. The trap is also provided with an activating means (8, 9, 10) provided to act upon the door (7) to go from the first to the second position, with a first touching element (10) in the cage, and a second gable wall (3). According to the invention, the trap is primarily characterized in that it is provided with indicating means, optically readable in a relatively large distance, for indicating of the activated or deactivated position of the trap.